

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently amended): A pigment-based black ink, comprising:

at least one carbon black pigment dispersions and at least one macromolecular chromophores (MMCs) ; and

an aqueous solution medium,

wherein the weight ratio of the carbon black pigment dispersions to macromolecular chromophores (MMCs) is between 1:2 and 2:1.

Claims 2-3 (Canceled).

Claim 4 (Original): The pigment-based black ink as claimed in claim 1, wherein the carbon black pigment dispersions has a particle size of less than 1 μm .

Claim 5 (Original): The pigment-based black ink as claimed in claim 1, wherein the macromolecular chromophores (MMCs) has a particle size of less than 1 μm .

Claim 6 (Original): The pigment-based black ink as claimed in claim 1, wherein the carbon black pigment dispersions is present in an amount of 0.01 to 10 weight%.

Claim 7 (Original): The pigment-based black ink as claimed in claim 1, wherein the macromolecular chromophores (MMCs) is present in an amount of 0.01 to 10 weight%.

Claim 8 (Original): The pigment-based black ink as claimed in claim 1, wherein the macromolecular chromophores (MMCs) is anionic.

Claim 9 (Original): The pigment-based black ink as claimed in claim 8, wherein the macromolecular chromophores (MMCs) contains carboxylate, sulfonate, or a combination thereof.

Claim 10 (Original): The pigment-based black ink as claimed in claim 1, wherein the medium further contains an additive, the additive comprises one of an organic solvent, surfactant, pH buffer solution, chelating agent, biocide, humectant, preservative, and UV-blocker.

Claim 11 (Original): The pigment-based black ink as claimed in claim 10, wherein the medium contains 0.1 to 20 weight% of an organic solvent.

Claim 12 (Original): The pigment-based black ink as claimed in claim 10, wherein the medium contains 0 to 30 weight% of a surfactant.

Claim 13 (Original): The pigment-based black ink as claimed in claim 10, wherein the medium contains 0.1 to 30 weight% of a humectant.

Claim 14 (Original): The pigment-based black ink as claimed in claim 1, wherein the carbon black pigment dispersions is present in an amount of x weight%, the MMCs is present in an amount of y weight%, x is between 0.01 and 10, y is between 0.01 and 10, both based on the total weight of the pigment-based black ink,

wherein the pigment-based black ink has a higher optical density than ink containing (x+y) weight% of the carbon black pigment dispersions and containing no MMCs, and wherein the pigment-based black ink has a higher optical density than ink containing (x+y) weight% of MMCs and containing no carbon black pigment

dispersions.

Claims 15-16 (Canceled).

Claim 17 (Currently amended): An inkjet printing method for increasing optical density of an ink, comprising:

(a) providing a pigment-based black ink, wherein the pigment-based black ink contains

at least one carbon black pigment dispersions and at least one macromolecular chromophores (MMCs) ; and

an aqueous solution medium, wherein the weight ratio of the carbon black pigment dispersions to macromolecular chromophores (MMCs) is between 1:2 and 2:1; and

(b) inkjet printing the pigment-based black ink onto a recording substrate.

Claims 18-19 (Canceled).

Claim 20 (Original): The method as claimed in claim 17, wherein the carbon black pigment dispersions has a particle size of less than 1 μm .

Claim 21 (Original): The method as claimed in claim 17, wherein the macromolecular chromophores (MMCs) has a particle size of less than 1 μm .

Claim 22 (Original): The method as claimed in claim 17, wherein the carbon black pigment dispersions is present in an amount of 0.01 to 10 weight%.

Claim 23 (Original): The method as claimed in claim 17, wherein the macromolecular chromophores (MMCs) is present in an amount of 0.01 to 10 weight%.

Claim 24 (Original): The method as claimed in claim 17, wherein the macromolecular chromophores (MMCs) is anionic.

Claim 25 (Original): The method as claimed in claim 24, wherein the macromolecular chromophores (MMCs) contains carboxylate, sulfonate, or a combination thereof.

Claim 26 (Original): The method as claimed in claim 17, wherein the carbon black pigment dispersions is present in an amount of x weight%, the macromolecular chromophores (MMCs) is present in an amount of y weight%, x is between 0.01 and 10, y is between 0.01 and 10, both based on the total weight of the pigment-based black ink,

wherein the pigment-based black ink has a higher optical density than ink containing (x+y) weight% of the carbon black pigment dispersions and containing no MMCs, and wherein the pigment-based black ink has a higher optical density than ink containing (x+y) weight% of MMCs and containing no carbon black pigment dispersions.

Claims 27-28 (Canceled).

Claim 29 (New): The pigment-based black ink as claimed in claim 1, wherein the carbon black pigment dispersions is present in an amount of 2 to 4 weight%.

Claim 30 (New): The pigment-based black ink as claimed in claim 1, wherein the macromolecular chromophores (MMCs) is present in an amount of 2 to 4 weight%.

Claim 31 (New): The pigment-based black ink as claimed in claim 1, wherein the carbon black pigment dispersions and the macromolecular chromophores (MMCs) are present in an amount of 6 weight%.

Claim 32 (New): The method as claimed in claim 17, wherein the carbon black pigment dispersions is present in an amount of 2 to 4 weight%.

Claim 33 (New): The method as claimed in claim 17, wherein the macromolecular chromophores (MMCs) is present in an amount of 2 to 4 weight%.

Claim 34 (New): The method as claimed in claim 17, wherein the carbon black pigment dispersions and the macromolecular chromophores (MMCs) are present in an amount of 6 weight%.